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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/781,525	02/08/2001	Shahrokh Sadjadi	50325-0510	2683

29989 7590 12/23/2003

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EXAMINER

PHAM, HUNG Q

ART UNIT PAPER NUMBER

2172

DATE MAILED: 12/23/2003

8

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/781,525

Applicant(s)

SADJADI, SHAHROKH

Examiner

HUNG Q PHAM

Art Unit

2172

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-6 and 8-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-12, 14, 16 and 18-30 is/are allowed.
- 6) ☒ Claim(s) 1-6, 13, 15 and 17 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments, see Reply to Office Action, filed 10/03/2003, with respect to the rejection(s) of claim(s) 1-6, 13, 15 and 17 under Kavanagh and Vahalia have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kavanagh and Soltis.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-6, 13, 15 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kavanagh et al. [USP 5,742,813] in view of Soltis et al. [USP 6,493,804 B1].**

Regarding to claims 1, 13, 15, and 17, Kavanagh teaches a method, a computer program, and an apparatus for concurrency controlling a plurality of users in an object oriented database management system, and allowing editing of the database while other users are concurrently searching the database by using a client/server

architecture comprising a knowledge base client and a knowledge base server (Kavanagh, Abstract). The object oriented database management system is a client/server database system with a dedicated server manages the entire database, and all other nodes are sometimes referred to as clients. The clients communicate with the server to access the database on behalf of the applications that run on them (Kavanagh, Col. 1, lines 15-29). The Kavanagh method provides optimal availability by allowing users to query and view class objects without disruption of their view while modifications such as additions, deletions, and edits of classes, attributes, instances, and parameters are being made by other users (Kavanagh, Col. 3, lines 49-58), and implements concurrency control in an object-oriented database using three types of lock modes: class share lock, tree update lock, tree exclusive lock and update lock, which is used for certain actions including modifying parameter values, adding, and moving instances (Kavanagh, Col. 8, line 65-Col. 9, line 45). As shown in FIGS. 10-12 are the flow diagrams representing the steps of a process that occurs when a user selects the "find class" activity. FIG. 14 is a diagram of a schema 248 corresponding to the display of FIG. 13, and it illustrates corresponding internal lock states of the classes 245, 240, 241, 246, 243, and 247 in the schema 248. FIG. 15 illustrates a lock table 250 as *a lock data structure* maintained by the lock manager 125 and corresponds to the schema 248 depicted in FIG. 14 and displayed in FIG. 13. The rows identified by reference numerals 251, 252, 253, 254, and 255 of the lock table 250 each corresponds to a class 245, 240, 241, 246, 243, and 247, respectively, in the schema 248 as *data indicative of values for a resource object identification*. Each lock holder has a corresponding column as lock

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objects 256, 257, 258, and 259. Class handle 251 in the lock table 250 has a CSL lock object 261 as *lock type* associated with lock holder 257 because the class 245 in the schema 248 is open on the display 116 of the user who is lock holder 257. The class 241 in the schema 248 has a CSL 262 because the user who is lock holder 257 also has it open. Class 243 in the schema 248 has a CSL lock object 260 because it is the selected class (Kavanagh, Col. 18, line 4-Col. 19, line 26). The Kavanagh technique as discussed indicates the step of *creating and storing a lock data structure for a particular resource object, the lock data structure comprising data indicative of values for a resource object identification, and a lock type*. As shown in FIG. 38, the steps that are involved in concurrency control when using the schema editor to change the structure of the schema is described. In step 340 when the user selects the schema developer or schema editor 144 for obtaining a TXL lock on the sub-tree that the user wishes to modify at step 341, where a tree exclusive lock is requested for the active class 243. If the TXL cannot be obtained, then the process branches to step 342 and the schema developer 144 cannot be started. When the TXL lock is granted, the method proceeds to step 343 and the schema developer screen 350 is displayed. After obtaining a CSL lock by the schema developer 144 for the parent class 241 of the class 243, the schema could be edited in step 345 (Kavanagh, Col. 23, lines 17-35). The technique as disclosed in FIG. 38 indicates the steps of *receiving a request from a requesting process for a requested lock type for access to the particular resource object; and determining whether to grant the request based on the requested lock type and the lock type in the lock data structure*. Kavanagh does not disclose the lock data structure has *a version number related to a*

*number of changes to the resource object since the lock data structure was generated.* Soltis teaches a method for controlling locks of data storage device. Soltis further discloses the lock structure has *a version number related to a number of changes to the resource object since the lock data structure was generated* (Soltis, Col. 15, lines 15-16; Col. 17, lines 18-38). Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify the Kavanagh method by including a version number in the lock table as taught by Soltis, and by doing this, the version number indicates to other users that modified data has been stored in the database.

Regarding to claim 2, Kavanagh and Soltis teaches all the claimed subject matters as discussed in claim 1, Kavanagh further discloses the steps of *bringing the value of the lock type in the data structure into agreement with the lock type in the request; generating a lock object having data indicative of the values for the resource object identification, the lock type from the lock data structure, and returning the lock to the requesting process* (Kavanagh, FIG. 38-39, Col. 23), but fails to teach the lock object has *the version number* as discussed in claim 1. As discussed in claim 1, Soltis teaches the lock structure has a version number and Soltis further discloses the lock object also has the version number (Soltis, Col. 15, line 40-Col. 16, line 65).

Regarding to claim 3, Kavanagh and Soltis teaches all the claimed subject matters as discussed in claim 1, Kavanagh further discloses the steps of *receiving a lock to be released having data indicative of values for the resource object identification and the*

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*lock type; determining whether the data indicative of the value for the lock type in the lock to be released indicates an exclusive lock, (Kavanagh, FIG. 38-39, Col. 23). Soltis teaches a version number, and changing the value for the version number in the lock data structure based on the value of the version number in the lock to be released (Soltis, Col. 15, lines 15-16; Col. 17, lines 18-38).*

Regarding to claim 4, Kavanagh and Soltis teaches all the claimed subject matters as discussed in claim 2, Kavanagh further discloses the step of *the lock data structure further comprises a reference number; said step of generating a lock data structure further comprises setting the reference number to a predetermined initial value; and said method further comprises, if it is determined to grant the request, then replacing the value of the reference number in the lock data structure with a sum of the value of the reference number in the lock data structure and a predetermined reference change value* (Kavanagh, FIG. 15).

Regarding to claim 5, Kavanagh and Soltis teaches all the claimed subject matters as discussed in claim 4, Kavanagh further discloses the step of *receiving a lock to be released having data indicating the particular resource object; determining whether the reference number substantially equals the predetermined initial value of the reference number; and if it is determined the reference number does not substantially equal the predetermined initial value, then replacing the value of the reference number in the lock data*

*structure with a difference substantially equal to the value of the reference number in the lock data structure minus the predetermined reference change* (Kavanagh, FIG. 15).

Regarding to claim 6, Kavanagh and Soltis teaches all the claimed subject matters as discussed in claim 5, Kavanagh further discloses the step of *deleting the lock data structure for the particular resource object if it is determined the reference substantially equals the predetermined initial value* (Kavanagh, Col. 10, lines 20-28).

#### ***Allowable Subject Matter***

#### **4. Claims 8-12, 14, 16 and 18-30 are allowed.**

The following is an examiner's statement of reasons for allowance:

Regarding to claim 8, 14, 16 and 18, Kavanagh and Vahalia also teaches a method, a computer program, and an apparatus for controlling access to a resource object, but the Kavanagh and Vahalia prior art does not update a resource object by *sending to a lock manager process a request for a second lock for access to the particular resource object, the request including data indicating the resource object identification and an exclusive lock type; receiving the second lock for access to the particular resource object, the second lock including data indicating the resource object identification, the exclusive lock type and a second value for the version number; determining whether the second value for the version number substantially equals the first value for the version number; and if the second value substantially equals the first value, then committing an updated resource object to the*



*resource, and replacing the second value in the reference number in the second lock with a third value of the version number, the third value computed by adding the second value and a predetermined version change value.* Therefore, the claims are allowable over the prior arts of record for being directed to a combination of claimed elements including the providing steps as indicated above.

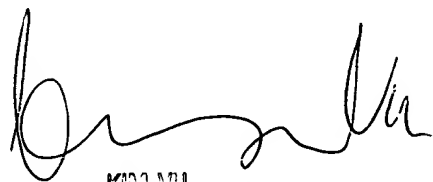
### **Conclusion**

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to HUNG Q PHAM whose telephone number is 703-605-4242. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JOHN E BREENE can be reached on 703-305-9790. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Hung Pham  
December 15, 2003



KIM VU  
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